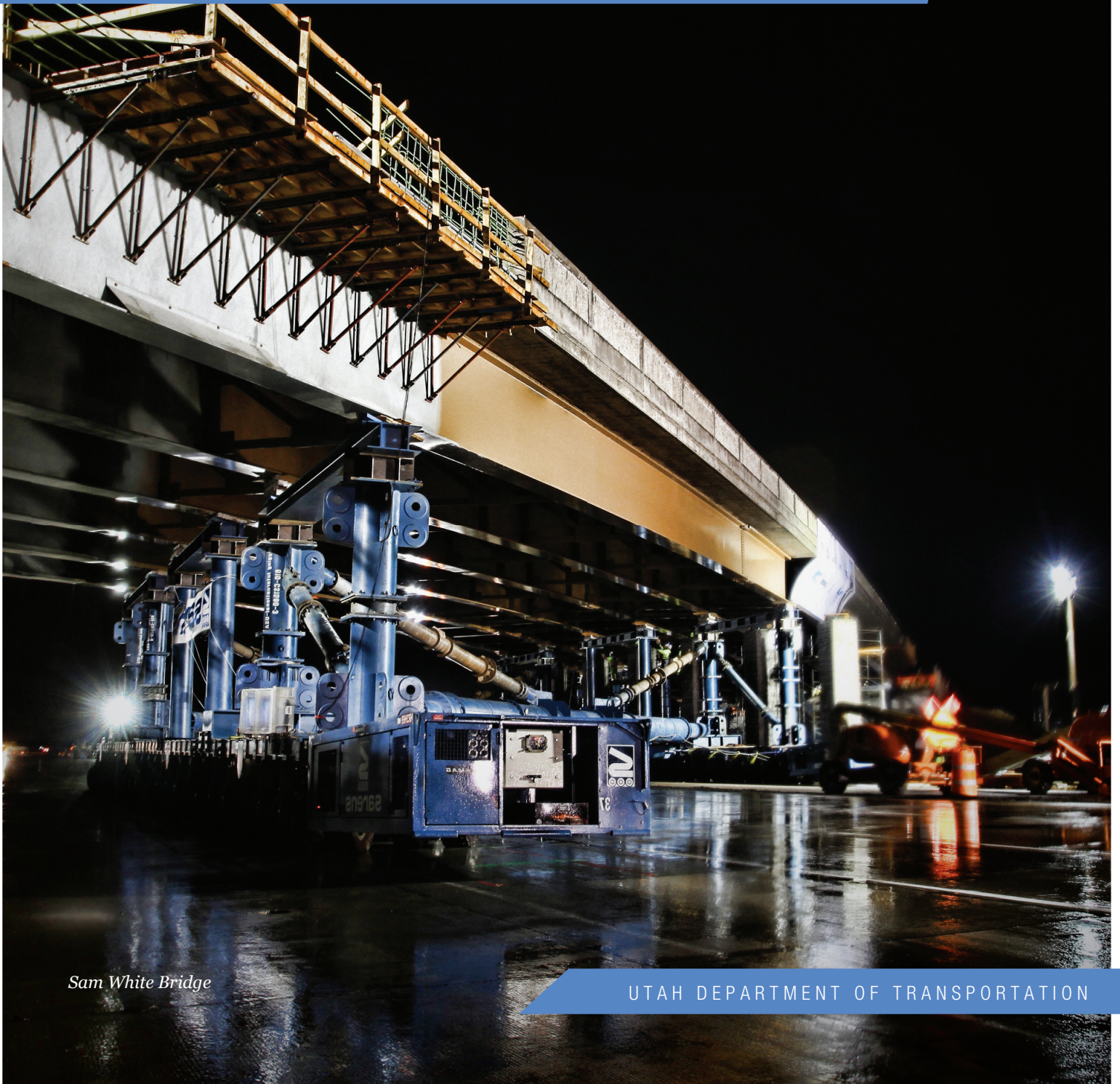


# 2012 STRATEGIC DIRECTION & PERFORMANCE MEASURES



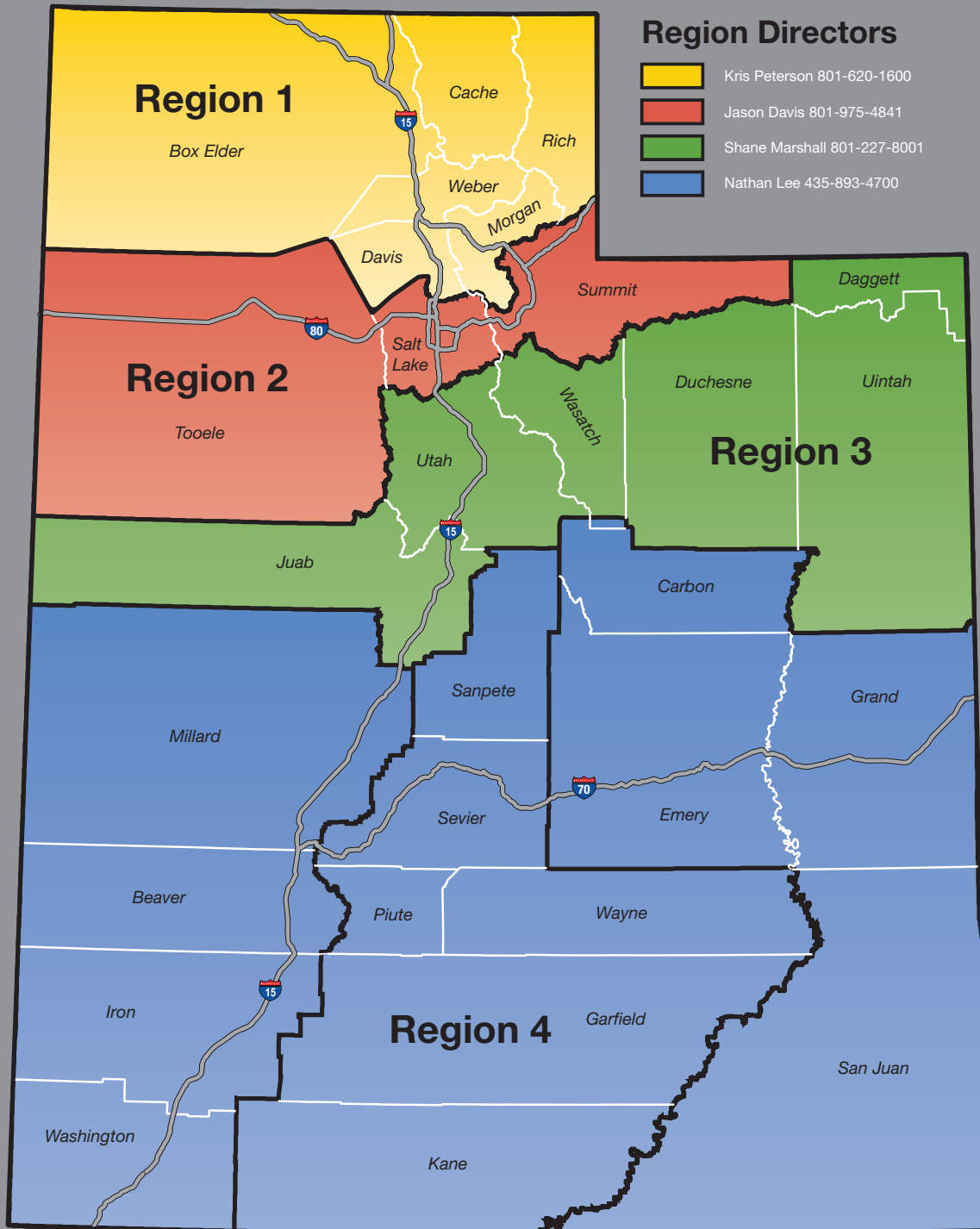
*Sam White Bridge*

UTAH DEPARTMENT OF TRANSPORTATION

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# UDOT REGIONS



# UTAH DEPARTMENT OF TRANSPORTATION



## The 2012 Strategic Direction: Measuring Progress and Planning for Utah's Future

Every day we interact in some way with Utah's transportation system. Whether it's through the goods we purchase or services we use, the places we work, the schools our children attend or the recreational areas we visit, our transportation system is the key to reaching our destination safely and efficiently.

As the custodian of Utah's roads, bridges and highways, UDOT's performance is critical to the health of our state's economy and to our quality of life. In order to chart consistent, measurable progress, we have focused on four goals over the past eight years. They have served us well and helped remind us of our responsibilities. This year, we have revised our goals and included a new and important objective. These new goals are:

- Preserve Infrastructure
- Optimize Mobility
- Improve Safety
- Strengthen the Economy

Government does not in and of itself create economic prosperity. However, government can facilitate, enable, stimulate and strengthen the economy. The work we do provides a foundation for a strong economy. As we focus on this new goal, I want UDOT to be responsible for a transportation system that enables private sector growth, promotes prosperity and ultimately strengthens Utah's economy.

With help from the outstanding employees here at UDOT and our partners in the contracting industry who work on our projects, Utah's transportation system saw some significant improvements in 2011. Here's a look at some transportation highlights:

**Major Capacity Projects Underway** – Construction on the I-15 CORE project and the Mountain View Corridor was well underway in 2011. Both will be complete by the end of 2012. No road project the size of I-15 CORE has ever been built in less time. Just as important, its cost per lane mile constructed is less than half of any other billion-dollar highway project in the country. In addition, very few brand-new facilities are being built nationwide, but here in Utah, three miles of the Mountain View Corridor opened in Utah County and 15 more miles will open in Salt Lake County by year end.



**Employing Innovation** – UDOT has long taken pride in the innovative techniques we employ on many of our projects. Last year was no exception. In March, the world watched as the Sam White Bridge in American Fork was moved into place over I-15 in just one night, using Accelerated Bridge Construction technology. At 354 feet, the bridge is the longest two-span bridge ever to be moved in the western hemisphere.

**Express Lanes Success** – Thousands of Utahns are now taking advantage of the value the Express Lanes bring. Users of the Express Lanes see the benefits of speed that are about 14 miles per hour faster than the general lanes during peak periods. The lanes are also proving to be safer, accounting for fewer than one percent of the crashes on I-15. UDOT currently has 80 miles of Express Lanes, and once the I-15 CORE project is finished, that number will jump to 124 miles, the longest continuous Express Lanes in the country.

**New Technology** – In December, UDOT launched its first smart phone app that allows people to get traffic, road conditions and road forecast information on the go. Now almost everyone can have the best and most up-to-date information from UDOT's Traffic Operation Center at their fingertips. Within one month of its release, nearly 30,000 people had downloaded the UDOT Traffic app.

Using the Strategic Direction as an outline, each section of this document explains goals, achievements and performance trends. While not exhaustive, this information gives an accurate picture of where we stand and where we need to go. In addition to this publication, supportive information can be found on our website, [udot.utah.gov](http://udot.utah.gov).

We take our responsibility seriously and will continue to work hard to maintain and improve a safe and efficient transportation system for Utah citizens.

Thank you,



John Njord  
Executive Director  
801-965-4113

# THE UTAH TRANSPORTATION COMMISSION

## Meeting Utah's Transportation Needs

The Utah Transportation Commission works in partnership with UDOT to provide a quality transportation system for all of Utah.

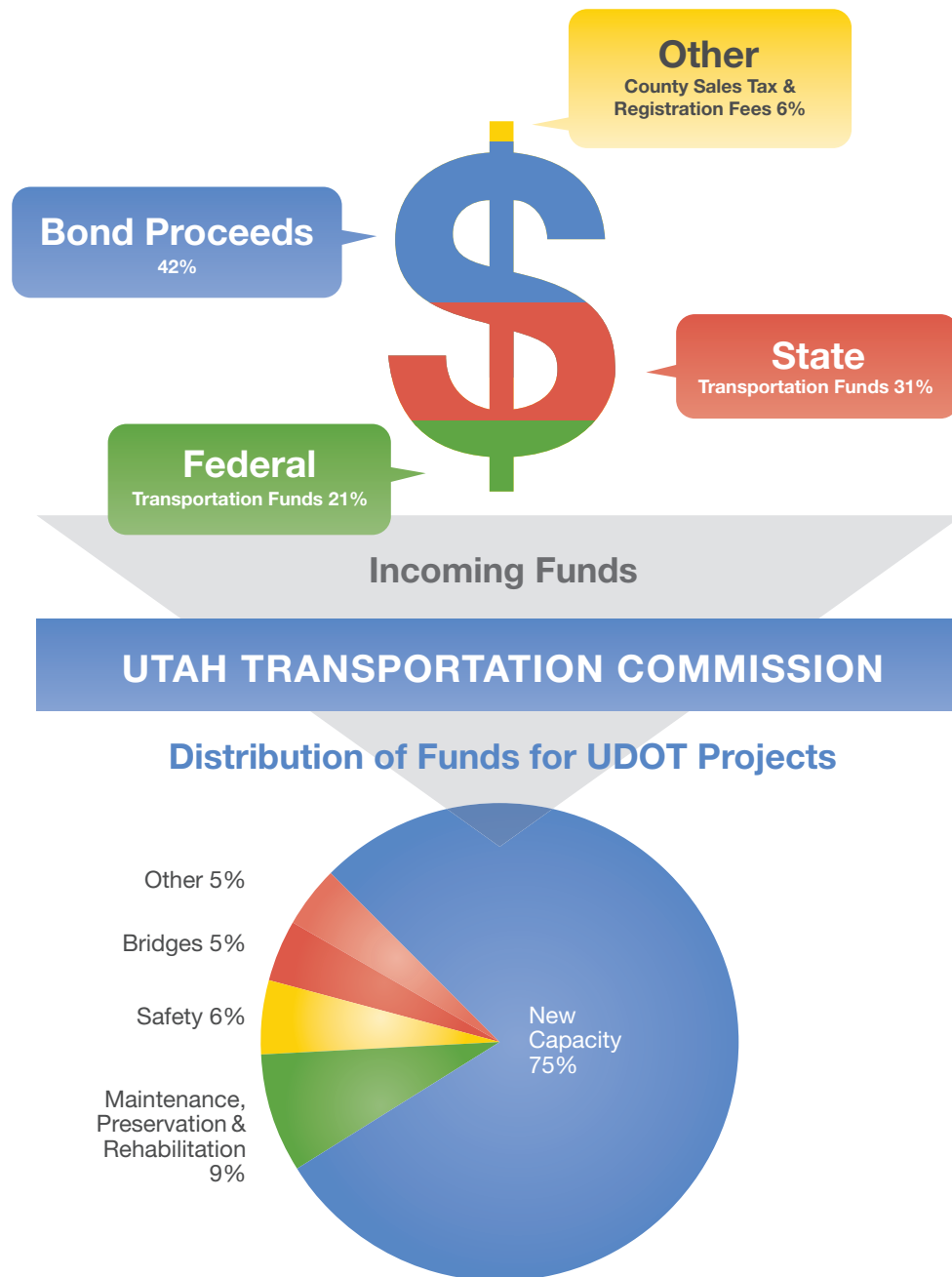
The Commission is comprised of seven members. Their roles and responsibilities, as defined in Utah Code 72-1-303, include:

- Determine priorities and funding levels of projects in the state transportation system considering a prioritization of needs provided by the Department
- Determine additions and deletions to the state highway system
- Take public comment about transportation matters at scheduled Commission meetings
- Make policies and rules under the Rulemaking Act, §63-46a, necessary to perform the Commission's duties
- Approve establishment of tollways for new state highways or new capacity lanes under §72-6-118
- Advise the Department on state transportation systems policy
- Review administrative rules made, amended or repealed by the Department
- Annually review public transit plans. In addition, one commissioner serves as a non-voting member of the Board of Trustees for the Utah Transit Authority

To find more information about the commissioners, visit [udot.utah.gov/go/commission](http://udot.utah.gov/go/commission). Each commissioner may be contacted directly or through the Commission Secretary.

## Available Transportation Funding 2012

UDOT operates its programs from a combination of federal, state and local funds. Amounts and percentages change from year to year.



# THE CHALLENGE

## Meeting Utah's Transportation Needs

The demands on Utah's transportation system continue to be substantial. Population growth and higher per capita system use have created demand for increased capacity. Increased system use has also put a strain on scarce resources to preserve and extend the life of roads and bridges.

Expanding and preserving our system will require improved efficiency, careful use of resources and close partnering with decision makers.

## Growth Also Creates Opportunity

Investing in transportation helps meet today's needs and builds a solid foundation for continued economic expansion and success. By building a strong and capable transportation system, UDOT can help facilitate, enable and stimulate economic prosperity.

## Population Growth vs. Lane Miles

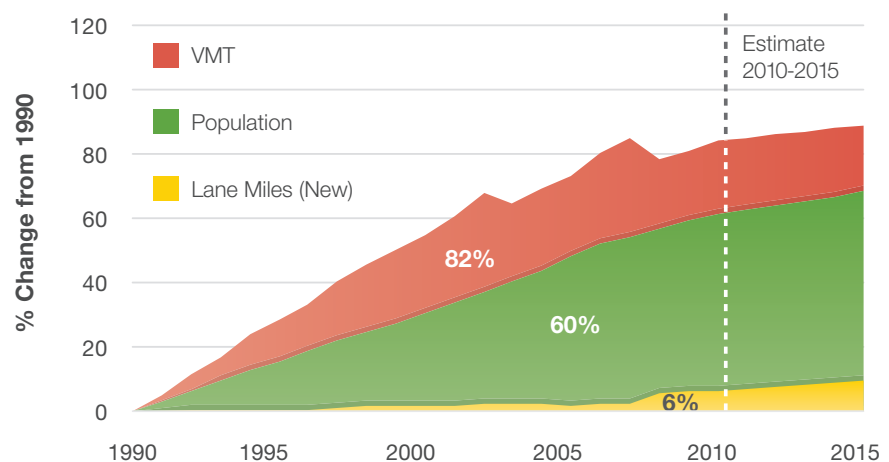
Between 1990 and 2010, Utah's population increased by 60 percent and the number of vehicle miles traveled (VMT\*) increased by 82 percent but capacity increased by six percent.

Projections show that by 2015, travel will increase by 85 to 90 percent, population by 70 to 80 percent and new capacity by seven percent. By 2050 more than five million people will call Utah home, making it one of the fastest growing states in the country.

\*VMT is a measure of the total number of vehicle miles traveled on a specific road segment over a given period of time. In this document, UDOT is using systemwide numbers calculated yearly.

## UTAH STATEWIDE GROWTH TRENDS

*VMT and population growth exceed increased transportation capacity, measured in new lane miles added to the system. Projections show growth will continue.*





Increased VMT gives rise to:

**Traffic Delay:** Utahns along the Wasatch Front experience 100,000 hours of systemwide delay per day. Improvements planned through 2030 will help maintain mobility.

**Increased Wear and Tear:** UDOT maintains nearly 6,000 centerline\* miles of roadways across the state, an investment worth tens of billions of dollars. In order to protect that investment, the transportation system must be kept in good condition.

**Vehicle-Related Crashes:** With increased traffic and vehicles, UDOT is working diligently on solutions to keep fatal crashes trending downward toward zero.



*UDOT opened the first section of the Mountain View Corridor (MVC) on September 24, 2011. 2100 North in Lehi offers drivers a new east-west connection between I-15 and Redwood Road. Fifteen miles of MVC between 5400 South and 16000 South in Salt Lake County will open in 2012.*

## UDOT Can Meet The Challenge

Finding ways to meet transportation needs while keeping our current system in good condition requires resourcefulness and innovative thinking. The state has more than \$26 billion in unmet highway needs already identified through 2040. UDOT recognizes that every transportation need cannot be funded with projected revenue sources.

To meet the challenge, UDOT is focusing on its Final Four Strategic Goals:

- **Preserve Infrastructure**
- **Optimize Mobility**
- **Improve Safety**
- **Strengthen the Economy**

*\*Centerline miles: On a road segment, a measure of distance between a beginning and ending point.*

*Lane miles: On a road segment, the centerline measurement times the total number of lanes.*



*Crews carefully lower a pre-cast bridge deck panel into position on the west-bound bridge over the Union Pacific Railroad line on I-84, at Taggart in Morgan County. This bridge rehabilitation project was accomplished during the summer of 2011 and was selected as UDOT's Rural Project of the Year.*

## Strategic Goal

# PRESERVE INFRASTRUCTURE

UDOT's first goal is preserving Utah's existing transportation infrastructure. The state's multi-billion dollar investment in roads, bridges and other assets must be maintained for future generations.

Keeping Utah's bridges and pavement in good condition is the most effective way to extend the life of the transportation system. UDOT maintains a multi-billion dollar system by:

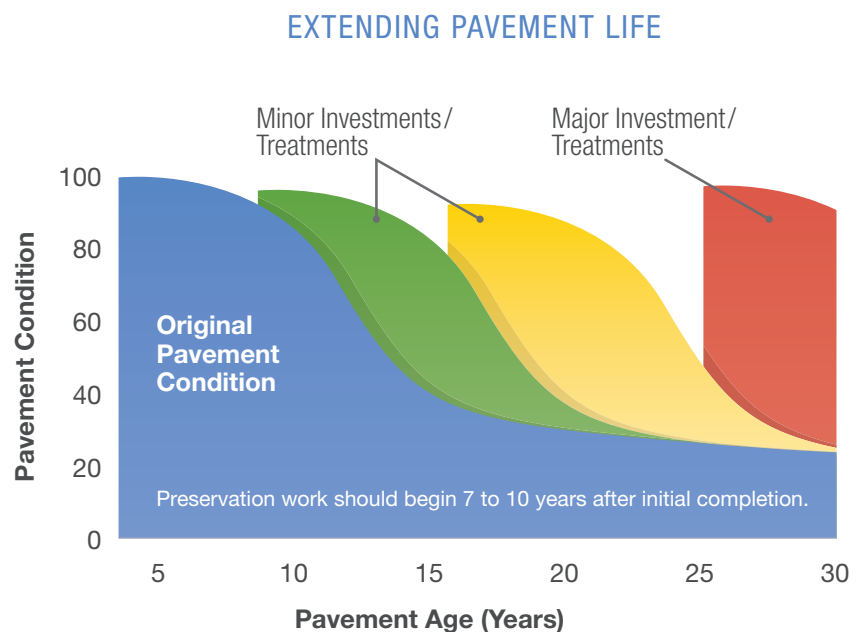
- Applying well-timed preservation treatments
- Addressing critical needs first

### Good Roads Cost Less

The most effective way to preserve the transportation system is to continue a regular schedule of upkeep to prevent deterioration.

Preserving our infrastructure includes actions such as:

- Sealing decks, painting steel and maintaining joints and bearings on bridges
- Repairing cracks and potholes and resurfacing asphalt or concrete pavement
- Repairing or replacing drainage systems



*Once deterioration occurs, taxpayers will shoulder a much higher cost to repair or rebuild pavement and bridges.*

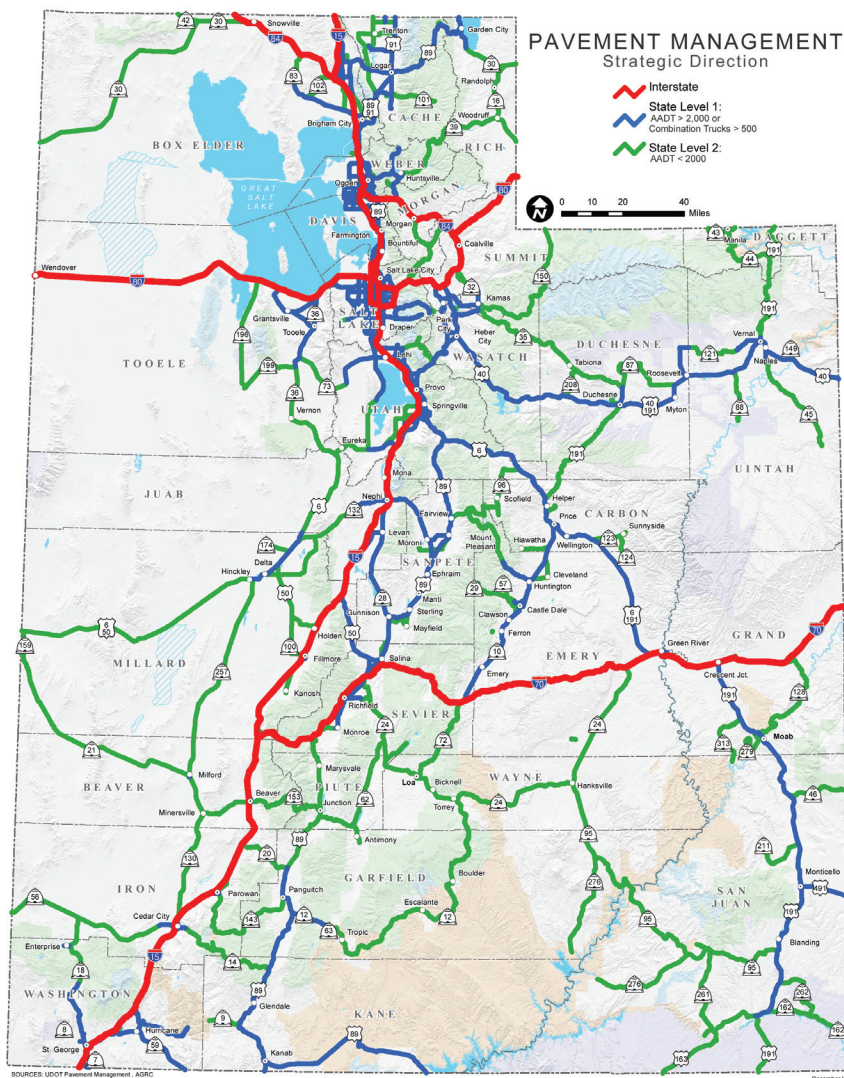
## Preserving Pavement

UDOT uses a long-term strategy to preserve and maintain the transportation infrastructure. By applying a combination of routine maintenance, preservation, minor and major rehabilitation and reconstruction projects, UDOT is able to utilize limited funding to maximize the pavement condition.

Regularly scheduled upkeep is the most cost effective method to preserve and extend the life of the state's pavement asset.

Three different maintenance management levels were created in recognition that roads have different values based on the volume of daily traffic. The three maintenance levels are:

- Interstate
- Level 1 Roads: More than 2,000 cars per day
- Level 2 Roads: Fewer than 2,000 cars per day



### **Interstate**

Miles ~ 935, 16%  
Lane Miles ~ 25%  
VMT ~ 53%  
Combo Truck VMT ~ 63%

### **Level 1**

AADT > 2,000 and/or  
Truck Volumes  
> 500  
Miles ~ 2,180, 37%  
Lane Miles ~ 41%  
VMT ~ 43%  
Combo Truck VMT ~ 32%

### **Level 2**

AADT < 2,000  
Miles ~ 2,735, 47%  
Lane Miles ~ 34%  
VMT ~ 4%  
Combo Truck VMT ~ 5%





*Crews on the I-15 Dowel Bar Concrete Rehabilitation project in Box Elder County finish a section of roadway near Tremonton by sealing the dowel bars into slots in the pavement with grout. Installing dowel bars in older concrete pavements can extend the functional life of a section of interstate from eight to 10 years, saving taxpayers millions in new construction costs.*

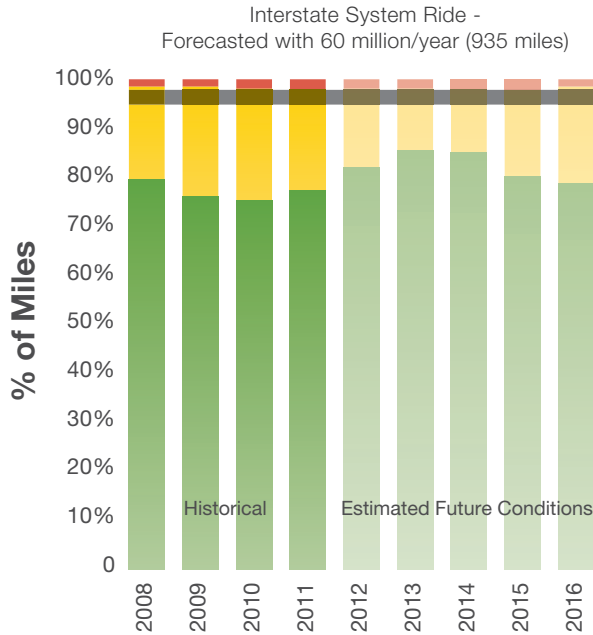
UDOT measures the health of the pavement by the percentage of systemwide roads in good and fair condition. By monitoring and maintaining pavement conditions within good and fair thresholds, UDOT is able to increase efficiency and reduce the cost of expensive reconstruction projects. Approximately \$145 million in federal funds and \$20 million in state funding are allocated annually to maintain the overall pavement condition.

#### Allocation of Pavement Funding

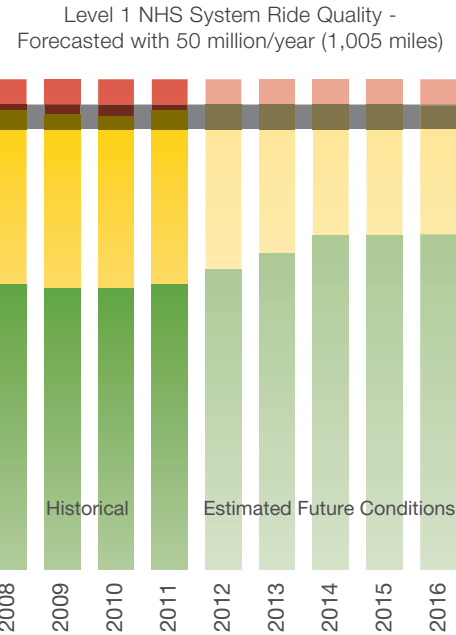
Interstate	\$60 million
Level 1 NHS	\$50 million
Level 1 Non-NHS	\$45 million
Level 2	\$10 million



### INTERSTATE SYSTEM PAVEMENT CONDITION HISTORICAL/PROJECTED

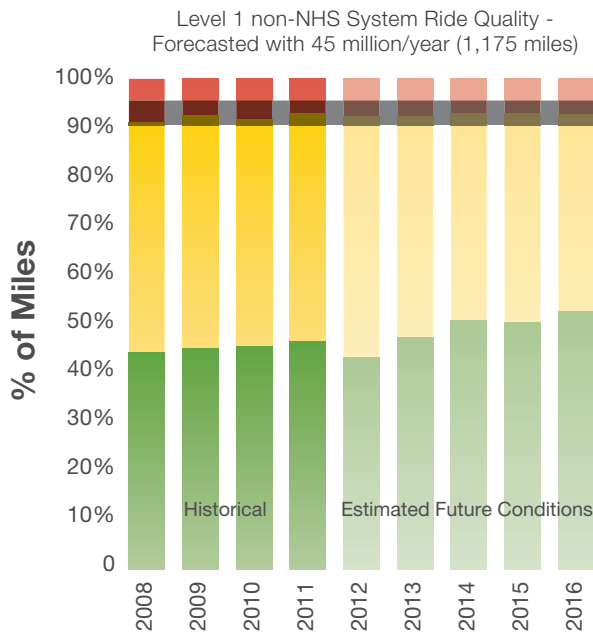


### LEVEL 1 NHS PAVEMENT CONDITION HISTORICAL/PROJECTED

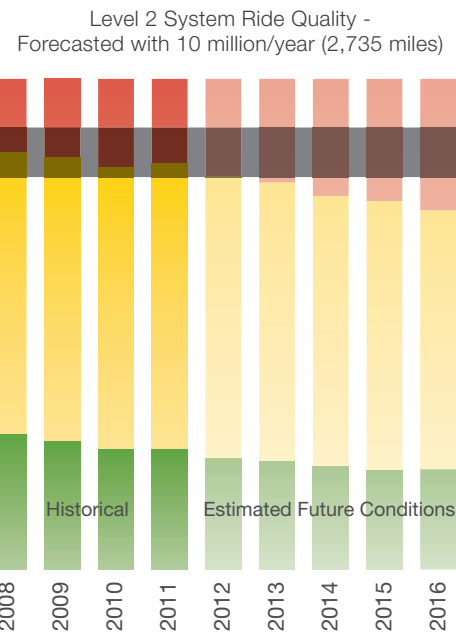


For the Interstates and Level 1 (National Highway System), the Department model continues to forecast an upward trend of the overall pavement condition based on current funding.

### LEVEL 1 NON-NHS PAVEMENT CONDITION HISTORICAL/PROJECTED



### LEVEL 2 PAVEMENT CONDITION HISTORICAL/PROJECTED



For Level 1 (non-National Highway System), the Department model continues to forecast a relatively stable condition while Level 2 continue a downward trend of the overall pavement condition based on current funding.

■ % Good: IRI < 95    ■ % Fair    ■ % Poor: IRI > 170  
■ Thresholds vary in width for each maintenance management level

2005 to 2011 condition based on measured .1 mile data  
 2011 to 2018 condition based on modeled "section level" index

### 2011 Accomplishments include:

- More than 90 preservation and rehabilitation projects completed
- Approximately 350 miles, or six percent of the system, received a specific preservation or rehabilitation treatment
- Overall pavement conditions continue to be good and fair
- During the last year the overall condition of the state's biggest investment, Interstates, continued to improve
- The pavement condition for Level 1 roads remained constant and Level 2 roads trended downward

### 2012 Goals include:

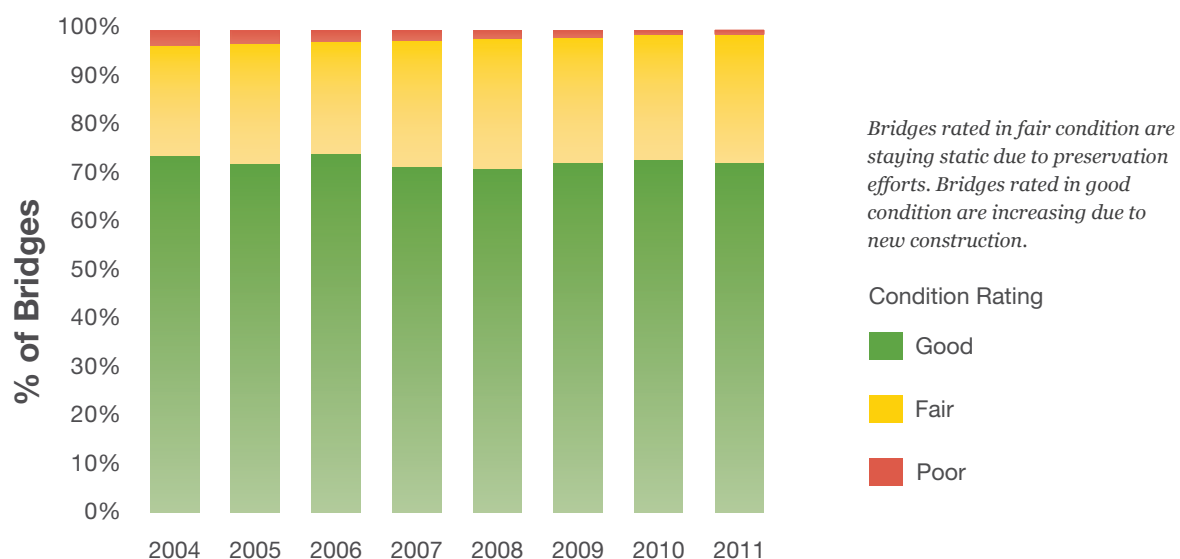
- Complete all preservation and rehabilitation projects on time and within budget
- Continue modeling to determine the proper funding mix between maintenance management levels; Interstate, Level 1 and Level 2
- Reverse or slow the pavement condition decline of Level 2 roads
- Continue to maintain the Interstates and Level 1 roads in good condition

## Preserving Bridges

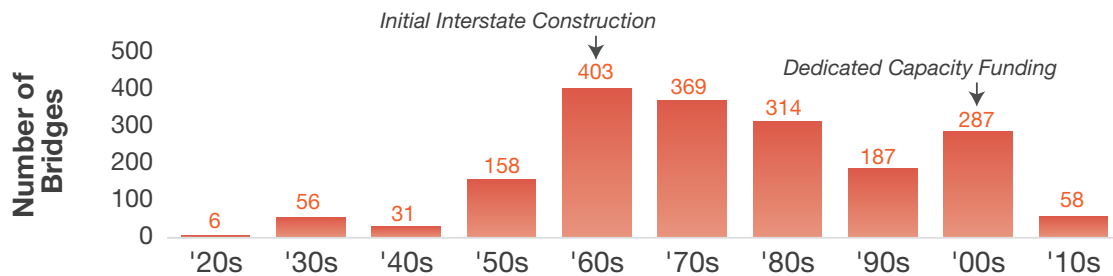
UDOT strives to maintain a safe transportation system by managing the bridge infrastructure. Preservation activities such as protecting bridge decks, cleaning expansion joints and maintaining bearings, aid in extending the life of a bridge for a nominal cost while negligence can increase the rate of bridge deterioration, reduce the bridge life expectancy and require major bridge rehabilitation or replacement at a much higher cost.

UDOT measures the health of the bridge system using condition ratings. UDOT's bridges continue to be safe with the overall rating of "good" and bridges rated "poor" continue to decrease. However, there are approximately 700 bridges that will need to be fixed or replaced in the coming years to prevent long-term problems.

### CONDITION OF UDOT BRIDGES



## AGE DISTRIBUTION OF UDOT BRIDGES



*UDOT is seeing a boom in the number of 30- to 50-year-old bridges coming due for replacement.*

Because UDOT is experiencing a boom in the number of aging bridges, about 40 older bridges will need to be replaced each year over the next 30 years. UDOT is planning for the future and evaluating means and methods to extend the life of existing bridges, while reducing future bridge costs by keeping them in good condition.

### 2011 Accomplishments Include:

- Seven bridges were built and installed as either new structures or to replace existing bridges
- Bridge preservation and rehabilitation activities were performed on more than 35 bridges
- The bridge condition has remained constant with an overall good condition rating

### 2012 Goals Include:

- Continue to maintain a bridge system rated in good condition
- Expand bridge management efforts and prepare a plan for every structure based on preservation, rehabilitation and replacement needs
- Continue to improve the Bridge Asset Management System to project future bridge needs and funding to effectively manage the structure assets

## Strategic Goal

# OPTIMIZE MOBILITY

UDOT's past goals of "Make the System Work Better" and "Increase Capacity" have always been very connected and focused on providing mobility on the highway system. Without diminishing either goal, UDOT has combined them into one comprehensive goal of "Optimize Mobility."

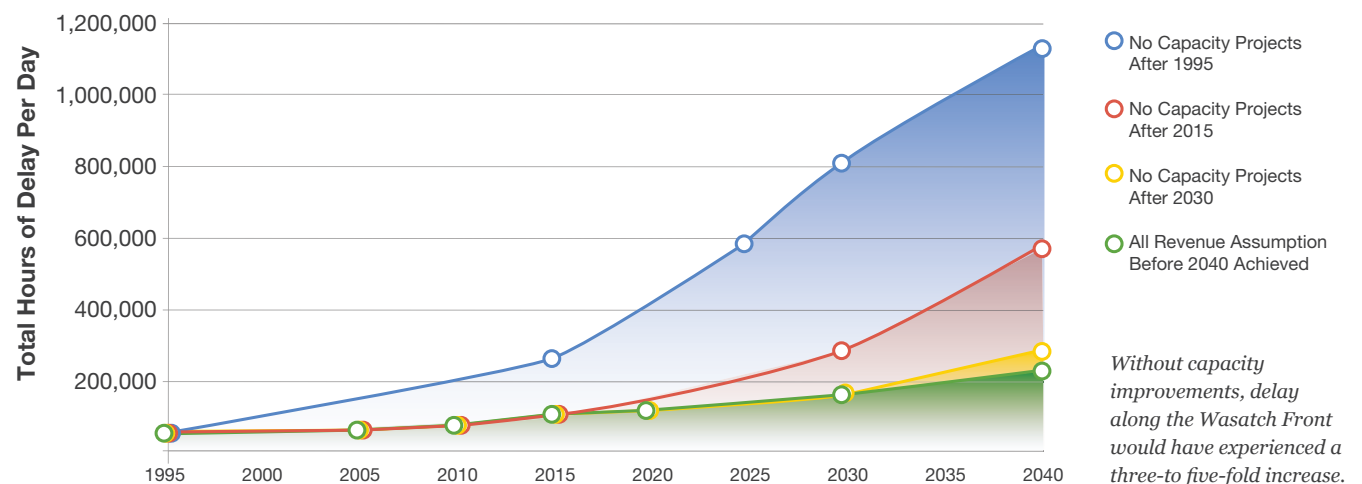
UDOT works to optimize traffic mobility through:

- Adding capacity
- Innovative cross roads
- Managed lanes
- Signal coordination

### Planning for the Future

Traffic delay diminishes the quality of life for all who live and drive in Utah. Thanks to state funding, UDOT is currently holding back delay. Data from the Wasatch Front Regional Council (WFRC) shows current and projected delay with and without capacity improvements starting in 1995. Between 1995 and 2010, delay is shown to be at a standstill, even with a 50 percent increase in population and VMT.

### DELAY ALONG THE WASATCH FRONT - DAVIS, WEBER, SALT LAKE & UTAH COUNTIES



Even with planned capacity projects, delay will increase after 2012. However, the increase in delay would be two times greater by 2015 without capacity projects, according to WFRC's projections.



## Adding Capacity: Lane Miles and Funding Sources

Since 2006, more than 730 miles have been added to the state system from four different programs that fund more than 200 projects.

### **Centennial Highway Fund (CHF), 1998:**

This \$3.9-billion program funded a number of projects including I-15 reconstruction in Salt Lake County and Legacy Parkway. 11400 South was the last project in the program. Revenue sources flow to the Transportation Investment Fund.

### **Transportation Investment Fund (TIF), 2005:**

This \$2.7 billion program is funding several projects, including I-15 CORE, Mountain View Corridor, Southern Corridor in St. George and the recently completed Pioneer Crossing in American Fork.

### **Critical Highway Needed Fund (CHNF), 2007:**

This \$1.2-billion program funds alternate routes for I-15 reconstruction, access, congestion and commercial energy development needs. Project examples include Timpanogos Highway (S.R. 92), Mountain View Corridor, 2100 North, I-15 South Layton Interchange, I-15 Dixie Drive Interchange and passing lanes on U.S. 40.

### **Highway Construction Program (HCP):**

This \$323-million program funds small-scale congestion relief projects on state and federal highways. Project examples include Hinckley Drive (S.R. 79) in Weber County; S.R. 9 in Hurricane and I-15 from 9000 South to 10600 South.



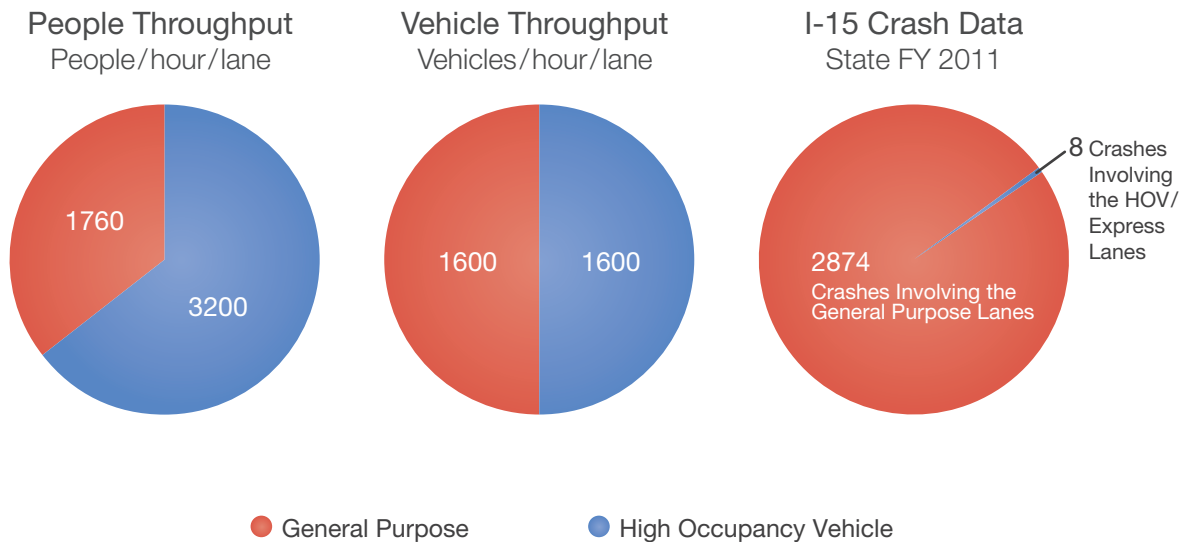
*As part of the 11400 South project, a new bridge was built over the Jordan River providing a new east-west facility between Bangerter Highway and I-15.*

## Managed Lanes

Innovative lane use helps move people more efficiently:

**Express Lanes:** UDOT currently has 80 miles of Express Lanes (40 miles both northbound and southbound) from the South Layton interchange to just below Lehi. A 10-mile gap between North Salt Lake and Kaysville is currently being studied. An additional 44 miles of Express Lanes will be added with the completion of the I-15 CORE project, for a total of 124 miles of Express Lanes. More than 10,000 Express Pass transponders have been purchased and users average speeds of 68 mph, 14 mph faster than the general lanes during peak hours. Express Lanes carry almost twice the number of people per day versus general purpose lanes, but account for less than one percent of the crashes on I-15.

### EXPRESS LANES VS. GENERAL PURPOSE LANES USAGE TYPICAL PM PEAK, SB I-15 AT 9000 SOUTH



**Flex Lanes** (operational in 2012): Flex Lanes on 5400 South in Taylorsville will accommodate heavy directional traffic by alternating the direction of the lanes during peak hours of the day, significantly decreasing traffic delay with minimal construction costs.

**Commuter Lanes** (open Summer 2012): Commuter Lanes along Timpanogos Highway (S.R. 92) will provide a direct connection to and from I-15 and eliminate stopping at signals, allowing reduced travel time and delays.



## Innovative Cross Roads

**Thru-Turns Intersections (TTI):** The TTI on 12300 South in Draper and 5400 South in Kearns will improve traffic flow, maintain access and enhance safety. By eliminating all left turns at the intersection, the number and severity of crashes are greatly reduced. Motorists will instead travel through the intersection, make a signalized U-turn and come back to the intersection, where they will turn right.

### Intersection Wait Times in 2030

Before TTI	2 minutes
After TTI	26 seconds

### Diverging Diamond Interchange (DDI):

DDIs, such as those in Lehi, American Fork and S.R. 201 at Bangerter Highway, improve safety and mobility while reducing the length and cost of construction. UDOT is looking at other locations where DDIs would prove beneficial.

### Average Delay Times

DDI Interchange (S.R. 92)	14.4 seconds
Diamond Interchange	47.2 seconds
Single Point Urban Interchange (SPUI)	23.9 seconds

### Continuous Flow Intersections (CFIs):

CFIs improve traffic congestion by allowing vehicles to move more efficiently through the intersection with less delay. UDOT currently has nine CFIs in operation.

### Benefits of a CFI

Saves Time	Four minutes of delay saved per driver during rush hour
Moves More Vehicles	Carries 20 percent more traffic than a standard intersection



*Thru-Turns (TTI)*



*Diverging Diamond Interchange (DDI)*



*Continuous Flow Intersection (CFI)*



## Operating Utah's Roadways

### The Traffic Operation Center (TOC):

The TOC is the nerve center of UDOT. Using advanced technologies such as cameras and traffic/weather sensors, operators in the TOC can monitor traffic, detect problems and take actions necessary to return traffic flow to normal. The TOC continues to be the key to providing a cost-effective and efficient solution to help relieve congestion on Utah's roads and highways.

### Signal Coordination

UDOT is committed to making our signal operations world class. We focus our efforts through the Traffic Management Division, which is responsible for traffic signal timing on all state roads and controls signal timing centrally at the TOC. Effective coordination of traffic signals reduces congestion, saves fuel, reduces vehicle emissions, increases safety and sustains the economy. Because of the many benefits, John Njord has the Department marching toward a world-class traffic signal system.

In 2011, 10 detailed signal coordination projects took place, including the greater Salt Lake City central business district. UDOT worked with its partners to time 164 signals and 22 corridors. UDOT is committed to making even more improvements in 2012.

### Benefits of Improved Signal Timing

Travel Time Reduced	5.5 percent
Stops Reduced	11.4 percent
Intersection Delay Reduced	14.7 percent
Estimated Savings to the Public in Reduced Delay	\$6.2 million



## Providing Traffic Information

UDOT uses a variety of methods to provide timely and accurate traffic and weather information to help drivers make choices that reduce delay, prevent crashes and improve air quality. By implementing an extensive Intelligent Transportation System (ITS), UDOT is able to know what is happening on Utah roads, and provide travelers the information they need to plan their routes. UDOT communicates travel information online at [udottraffic.utah.gov](http://udottraffic.utah.gov) and through:



**Variable Message Signs (VMS):** UDOT has 160 VMS located on I-15 and on major routes, telling travelers of upcoming construction, lane closures, crashes blocking their route, expected travel times or information ahead of a large weather event.

**UDOT Traffic Cameras:** Located throughout the state, UDOT traffic cameras provide real-time traffic views of current road conditions. These cameras help operators at the TOC know what's happening on the roads, are used by news stations to report traffic conditions and are readily available to the public at [udottraffic.utah.gov](http://udottraffic.utah.gov)

UDOT has more than 730 cameras in operation throughout the state, with more than 75 percent located in Salt Lake and Utah counties.

**Social Media:** UDOT uses Twitter, Facebook and YouTube to post information and updates on traffic conditions, changes in traffic flow, construction activities and weather conditions, as well as educational materials such as animations and tutorials.

**Traffic Mobile Application:** This application provides mobile access to information about current traffic conditions, accidents, road construction activities, seasonal road closures, traffic cameras and VMS messages.

## Reducing Travel Demand with TravelWise

To help make our transportation system work better, UDOT developed TravelWise. The TravelWise program encourages alternatives to driving alone to help travelers conserve energy, reduce traffic congestion and improve air quality. TravelWise strategies include ridesharing, carsharing, carpooling, vanpooling, active transportation (biking, walking), teleworking, e-traveling, using transit, flexible work hours and compressed work weeks.

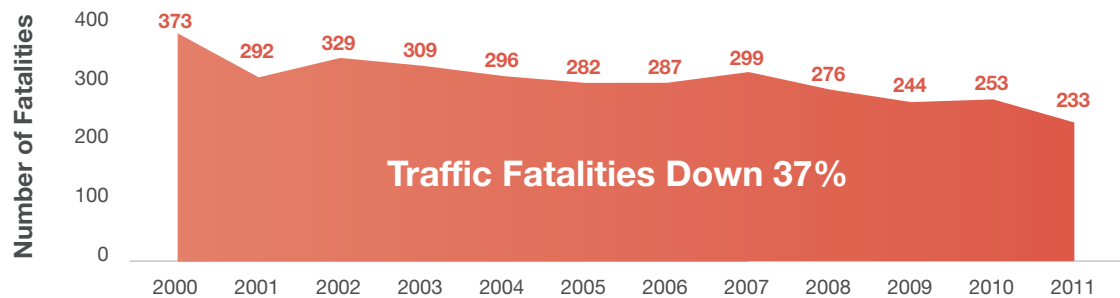


## Strategic Goal

# IMPROVE SAFETY

UDOT remains committed to safety. Traffic-related deaths are the lowest in 37 years.

### REDUCING HIGHWAY FATALITIES TO ZERO



*In 2011, 233 people lost their lives on Utah roads, making 2011 the lowest number of fatalities since 1974.*

Every UDOT project incorporates safety improvements. In 2011, UDOT programmed \$21.8 million for specific safety projects.

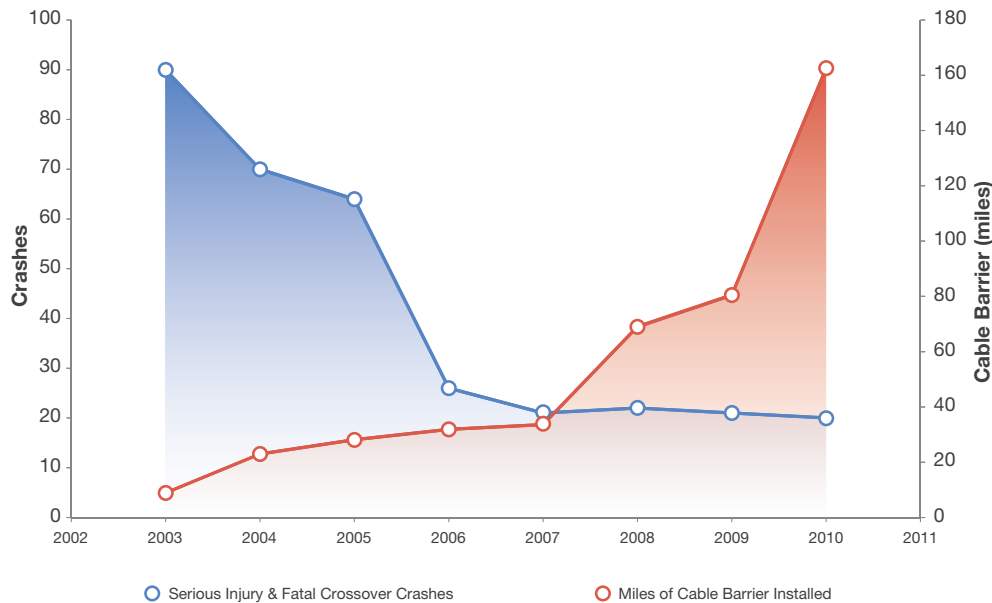
#### 2011 Accomplishments Include:

- 503 miles of centerline and shoulder rumble strips installed in various projects
- 26 miles of median cable barrier installed, for a total of 189 miles since 2003
- 14 miles of concrete barrier installed, for a total of 118 miles since 2004
- 10 new traffic signals constructed, 20 signal upgrades constructed
- 10 pedestrian/school crossing improvements
- Construction of 19 safe sidewalk program projects
- Installation of 422 access and replacement ramps

#### 2012 Goals Include:

- Reduce fatalities by two percent each year

## INTERSTATE SERIOUS INJURY AND FATAL CRASHES INVOLVING A VEHICLE THAT CROSSED THE MEDIAN VS TOTAL MILES OF CABLE BARRIER INSTALLED



*The number of serious injuries and fatal crashes on Utah Roads, caused by vehicles crossing the median has reduced by more than 220 incidents since 1999. To date, UDOT has installed more than 180 miles of median cable barrier.*

### Public Outreach Efforts

UDOT demonstrates its commitment to safety through outreach efforts that help educate the public and make Utah a safe place for living, traveling and doing business. Much of UDOT's focus is on educating teens and kids. In 2011, UDOT safety programs made more than 500 presentations at schools and reached more than 90,000 students statewide.

#### Programs:

**Zero Fatalities:** Addresses the top five behaviors causing crashes on Utah roads: drowsy driving, distracted driving, aggressive driving, impaired driving and not buckling up

**Student Neighborhood Access Program (SNAP):** Develops safe routes and safety education for elementary students

**Road Respect:** Aims to improve safety and increase awareness of Utah's laws for both cyclists and drivers



*Students from Coral Canyon Elementary walk to school along the SNAP route.*

## Controlling Snow and Ice

To clear snow from 18,000 miles of Utah's roads, UDOT employs the latest technologies and trains crews to ensure they are ready. On average, Utah receives more than 20 winter storms each year and UDOT crews remove more than 65 million tons of snow and ice from Utah's roads. To help keep roads clear around the clock, UDOT employs 503 full-time snowplow drivers and 85 seasonal staff on its snow removal team, operating a fleet of 500 snowplows. UDOT's winter operations budget for the 2011-2012 winter season is \$22 million, including equipment, salaries, sand, salt, brine and avalanche control.



*Snow removal is a major component in keeping Utah's roadways safe.*

UDOT continues to make the snow and ice removal process more efficient by:

- Using equipment such as wing plows and tow plows that allow greater control and efficiency
- Applying brine before storms and using salt more efficiently
- Using technology such as Road Weather Information Systems (RWIS) and weather forecasting information to assess conditions and dispatch plows advantageously
- Evaluating road conditions within one hour of every storm event
- Saving more than 20,000 gallons of diesel fuel per year by training drivers using a snow plow simulator



*UDOT crews clear snow on S.R. 14, a canyon road from Cedar City to Cedar Breaks National Monument.*

## Strategic Goal

# STRENGTHEN THE ECONOMY

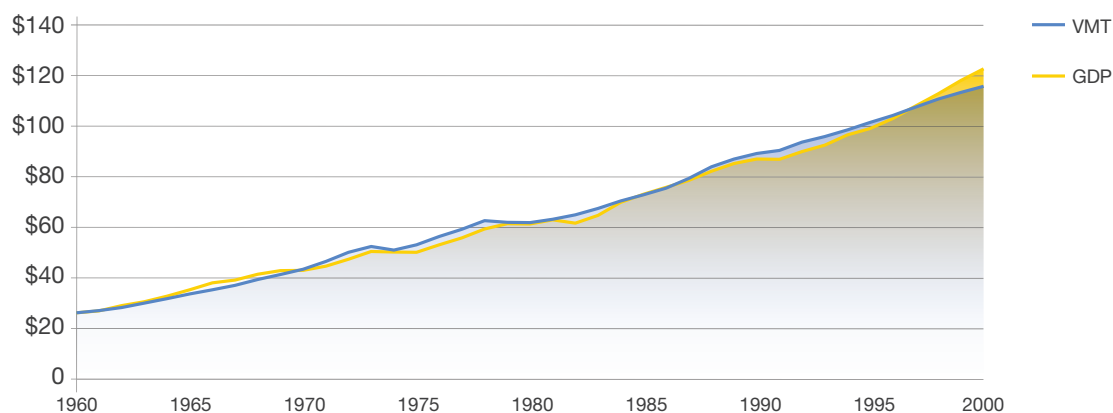
In line with Governor Gary Herbert's Four Cornerstones, which include increased job growth and economic development, "Strengthen the Economy" has been added as a new strategic goal. This new goal recognizes UDOT's role in creating and managing a transportation system that enables economic growth and empowers prosperity. Success in the first three goals creates a solid foundation for the economy to grow.

For the second year in a row, *Forbes Magazine* has named Utah as the best state in the U.S. for doing business. According to economists, transportation plays a big role in the state's business environment. With major interstates such as I-15, I-80, I-70 and I-84, Utah is truly the "Crossroads of the West." Because of Utah's transportation infrastructure, manufacturers can get their products across the country more quickly than ever before.

### The Relationship of VMT and GDP

The nation's highway vehicle miles traveled (VMT) and the U.S. gross domestic product (GDP) reflect strikingly similar patterns, indicating the strong relationship between the nation's economy and its travel. The graph shows how closely the two data series track each other over the past four decades and demonstrates why keeping Utahns moving is so important to our economy.

### THE RELATIONSHIP OF VMT AND GDP



Graph courtesy the U.S. Dept. of Energy.

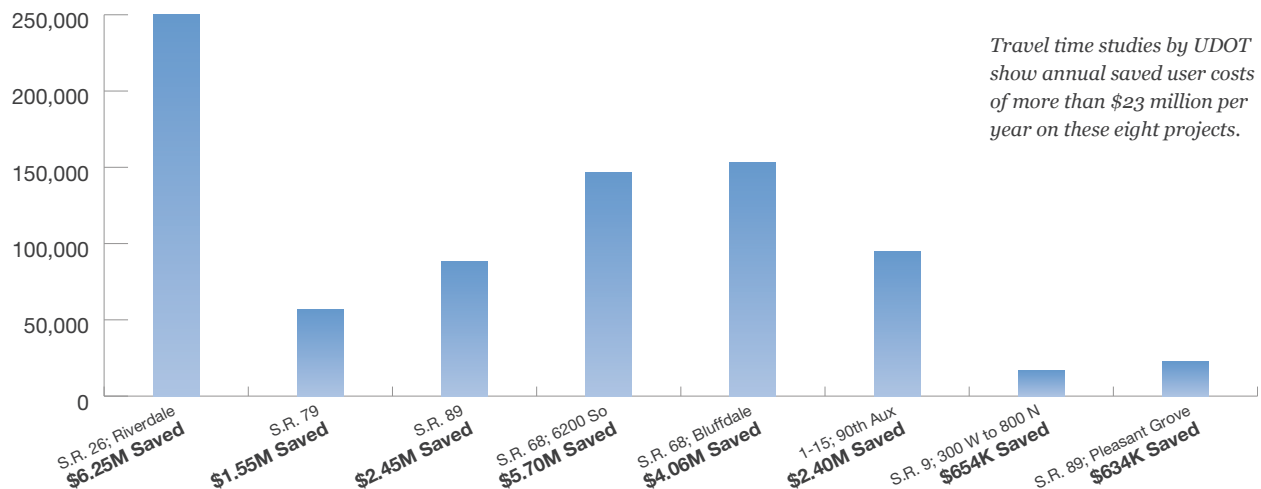


### UDOT's Projects Affect the Economy:

Traffic delay has an intrinsic, measurable cost not only to commerce, but also to users of Utah's roads and freeways. By improving roads through key projects, UDOT can create a transportation system that can minimize those costs and provide economic benefits to businesses, tourism and individual drivers.

Before-and-after studies on eight capacity projects illustrate how UDOT effectively eliminated hours of delay. User costs, a result of delay, have also been reduced.

### ANNUAL USER HOURS AND COST SAVINGS



### How UDOT Does Business Affects the Economy:

UDOT can affect the economy not only through the product we deliver, but in how we deliver it.

Examples include:

- Price + Time Bidding (P+T):** Every project bid at UDOT uses P+T. With this method, contractors bid a price and the number of days it will take them to construct each project. Price and time values are added together to determine the low bid. The contractor with the most aggressive schedule is often awarded the contract. When construction time is minimized using the P+T method, the impacts to businesses and drivers are lessened.
- Accelerated Bridge Construction (ABC):** ABC utilizes innovative methods to construct bridges with minimal impacts to the public. New bridges using this method can now be in place in a matter of days rather than months. Bridges are constructed on the side of the road and often moved into place overnight. ABC is used where construction impacts to the public and surrounding businesses are significant, thus reducing the construction time.
- Number of Jobs Generated:** Currently, UDOT is working with more than 650 contractors, subcontractors and consultants that employ more than 14,000 employees working concurrently throughout the state. UDOT believes by channeling money back into the economy through job/project development, Utah's employment rate is significantly improved.

# DELIVERING RESULTS

## Project Delivery – Putting Funding to Use

The Department's construction program is divided into two main parts: Preconstruction and Construction.

### Preconstruction

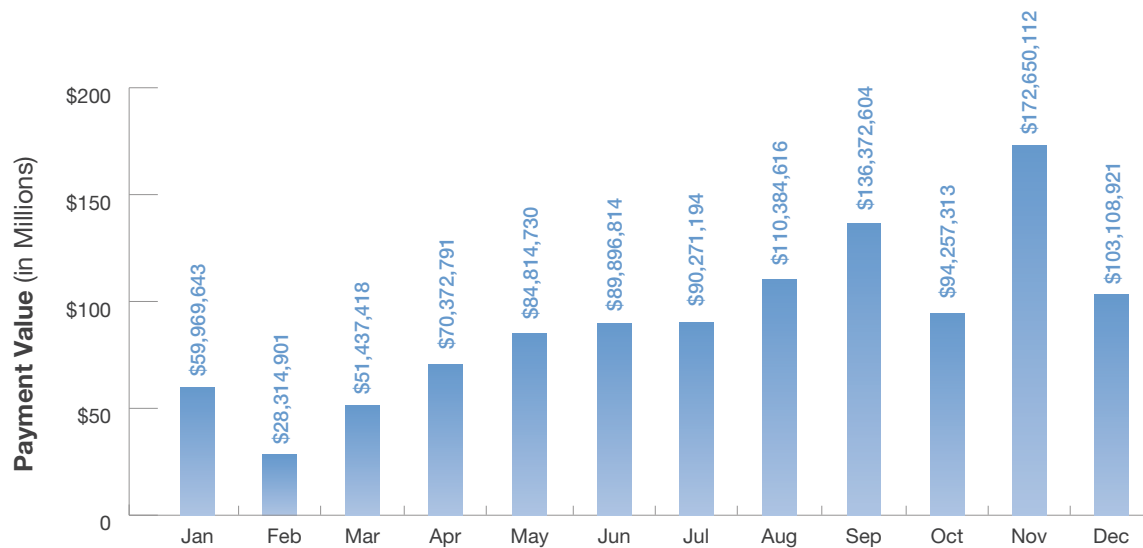
Before any asphalt or concrete is placed, UDOT has to complete all the necessary studies, roadway design, property and utility agreements and other elements.

The Department prepared 171 projects for construction in 2011 and currently has 202 projects in design, worth a total of \$1.07 billion.

### Construction

Once the necessary requirements and agreements are complete, construction can proceed. UDOT contracts with independent contractors for each project.

## 2011 MONTHLY CONSTRUCTION PAYMENTS



*Contractor payments are paid directly to the contractor and only cover the cost of construction. Projects in the design phase, as well as transportation studies, are not represented in this chart.*



**Sam White Bridge:** The Sam White Bridge in American Fork is the longest two-span bridge ever moved in the Western Hemisphere. The 354-foot structure was constructed using Accelerated Bridge Construction (ABC) on the side of the freeway and both spans were moved into place simultaneously in one night using two sets of Self Propelled Modular Transporters (SPMT).

